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FINANCING GAS PROJECTS IN THE EASTERN MEDITERRANEAN

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Financing Gas Projects in the Eastern Mediterranean

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Preface

In this paper, Tassos Giamouridis and Nikos Tsafos provide a detailed assessment of the factors that influence investment in gas and related infrastructure projects worldwide with a focus on the Eastern Mediterranean. They examine the relative merits of project finance and corporate finance for the development of offshore gas resources and for bringing the gas to market. In this analysis, they draw lessons from experience around the world and from the track record of the companies involved in exploration and production in the Eastern Mediterranean.

The authors explain the respective roles of the public and private sectors in financing gas projects and look at company strategies to make use of both sources of finance. They provide a detailed analysis of EU and other public financial instruments that can be mobilized for offshore gas projects in the Eastern Mediterranean.

Their paper concludes with a number of recommendations to governments and economic operators on the principles that should govern their financing strategies in the Eastern Mediterranean. The paper clarifies the complex issues involved in decisions concerning the financing of offshore gas projects and will be of value to those in the industry, financial institutions, government, and the wider policy community.

Sir Michael Leigh
Senior Fellow
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1 Project Development Challenges in the Eastern Mediterranean

The Eastern Mediterranean has become a hotspot for the oil and gas industry following a series of large-scale natural gas discoveries since 2009 offshore Israel and Cyprus.[1] So far, only a fraction of this resource has been developed: the first phase of the Tamar field in Israel at a cost of $3.3 billion.[2] The Leviathan (Israel) and Aphrodite (Cyprus) fields have yet to be developed, while Lebanon and Syria have promising exploration prospects but face serious political and commercial constraints. Several large-scale projects are under consideration to bring gas from the Eastern Mediterranean to market: there are proposed pipelines from Israel and Cyprus to Egypt, Jordan, and the West Bank to supply gas to these markets and to send gas to more distant markets through Egypt's export infrastructure. Other options — such as building liquefied natural gas (LNG) export facilities in Israel or Cyprus, or building a sub-sea pipeline to Greece or Turkey — are theoretically possible, although their technical and commercial viability remains to be demonstrated. In any event, the region will need to attract several billion dollars of new investment to commercialize this resource.

In developing such projects, the companies involved are likely to seek third-party financing, an increasingly popular way to fund infrastructure projects. The need to secure financing will affect every decision: how to develop the gas, who will be involved in the project, how the project will be structured, and where to export the gas. As is common with large energy discoveries around the world, the project that will actually be developed is the one that can secure financing.

An externally financed project, however, looks different from one financed through internal funds, because lenders and energy companies have different risk profiles. Moreover, when a project's sponsors borrow, their risk appetite changes. The need to service debt and adhere to conditions imposed by lenders affects the type of risks they are willing and able to take. The principle is simple: risk and uncertainty mean higher borrowing costs and thus a less attractive project. Predictability is critical. Lenders can accept risks if they are known and the companies have realistic strategies to mitigate them.

In the Eastern Mediterranean, the search for financing affects many decisions:

- Should project developers bring in, as partners, companies from countries that could offer funds in exchange for gas (for example, Japan, Korea, or China)?
- Should they procure engineering services or equipment from countries that offer export credit?
- Should they engage with European financial institutions? Would European financing mean that the gas should be sold primarily to Europe?
- Is there a role for other sovereign support, e.g. from the Gulf countries, especially for infrastructure geared to supplying gas to Arab countries (Jordan, Egypt, etc.)?

Each choice presents both opportunities and risks.

The project that will actually be developed is the one that can secure financing.

[1] For a detailed discussion of the commercial viability and other relevant conditions for successful development of the Cypriot discoveries, see, for example, Anastasios Giamouridis, *Natural Gas in Cyprus: Choosing the Right Option*, The German Marshall Fund of the United States, September 2013, http://www.gmfus.org/publications/natural-gas-cyprus-choosing-right-option; and Anastasios Giamouridis, *The Offshore Discovery in the Republic of Cyprus: Monetisation Prospects and Challenges*, Oxford Institute for Energy Studies, July 2012, www.oxfordenergy.org.

[2] Cost refers to total spending between 2008 and the start-up of operations in 2013. Information from Delek Group, *Annual Reports*, www.delek-group.com.

2 How Are Gas Projects Financed?

As capital requirements grow, the case for project finance with limited or no recourse to the parent becomes increasingly compelling.

Securing funds to undertake large-scale energy investments is always a paramount concern of project sponsors, and deciding how a project should be financed is one of the most important decisions that a company makes. It is, therefore, important to understand the principles that guide companies in these decisions.

Sponsors grapple with two main issues: should they use cash from operating activities or from debt? And if debt is used, should it be guaranteed by the parent company or made repayable through the cash generated by the project itself (i.e. how much recourse should the lenders have)?

Different companies take different financing paths, even for the same project. The owners of the Tamar field, for instance, financed their respective equity shares differently. Noble Energy, the operator and largest shareholder, financed its share through cash drawn from the parent company, in turn financed through income from operations, bonds, and a credit facility. By contrast, Delek Group, which is the second-largest owner, issued $2 billion in bonds in 2014, backed by revenues generated by the project itself (i.e. with limited recourse to the parent company), of which $1 billion refinanced previous loans for this project.[3] Even in the same undertaking, partners may choose different financing paths based on their respective needs and priorities.

How a company chooses to finance a project depends on factors such as the size of its balance sheet, its existing level of debt (leverage), its total level of capital spending, its risk tolerance, its credit-worthiness as indicated by its ability to secure debt at competitive rates, and the size and risk profile of the project to be financed. It is hard to predict which financing structure a company may opt to use for a new project.

Even so, a few observations are in order. The companies with a presence in the region, including the owners of the existing discoveries and the current explorers, have different financial profiles in terms of cash generated from operating activities, annual capital expenditures, debt levels, and credit ratings (see Appendix). These profiles, moreover, can evolve quickly due to changes in prices, costs, and margins. They also depend on each company's project pipeline — the prospective projects competing for capital within a corporate portfolio. A company with higher capital spending probably enjoys a larger balance sheet but is likely to have more projects competing for funds.

Even such a high-level reading of company financials illustrates that as capital requirements grow, the case for project finance with limited or no recourse to the parent becomes increasingly compelling, especially for smaller companies that would need to devote almost their entire annual spending to just one project. Project finance allows companies to undertake much larger projects without putting their balance sheets at risk, and may allow for greater diversification into multiple projects by reducing equity requirements. This is one reason that Delek Group used project finance for Tamar and why Noble Energy is "considering various project finance options for Leviathan," the largest discovery in the region so far.[4]

Project finance is widely used to finance large-scale infrastructure projects in general, and oil and gas projects in particular. High initial capital costs combined with reliable cash flows and robust margins, as a result of either strong market demand (oil) or long-term contracts (gas pipelines and LNG), make these projects attractive for limited recourse investment. Between 2008 and 2014, almost $1.5 trillion was raised worldwide in project finance across different economic sectors, with

[3] Delek Group, *Closing of bonds issue*, Press Release, May 21, 2014, www.delekenergy.co.il.

[4] Noble Energy, *Form 10-Q Quarterly Report*, Filed July 24, 2014, www.nobleenergyinc.com.

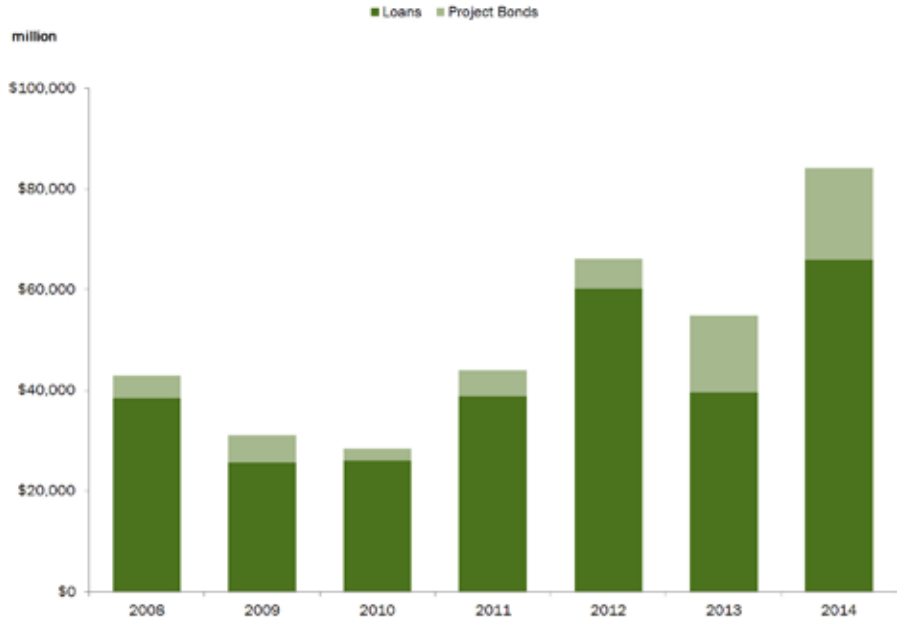
approximately 20 percent of this going toward the oil and gas sector (Figure 1). The availability of project finance for any given project depends on the overall liquidity of the global financial system, and the relative competitiveness of that project.

Project finance is increasingly popular, especially for LNG projects that require large initial capital outlays and are able to secure long-term commitments from buyers, guaranteeing 10-20 years of cash flow. Between 2009 and 2014, approximately 58 percent of the global liquefaction capacity that was approved for construction used some kind of project finance arrangement. Many of the remaining projects are actively looking to secure such finance (Figure 2). The exceptions to this rule are projects sponsored by large companies with ample cash, for example the Chevron-led Gorgon and Wheatstone projects in Australia, or Petronas' Malaysia LNG Train 9, and projects that involve some high degree of technical risk such as floating LNG projects like Shell's Prelude or Petronas' PFLNG 1 and 2.

Project finance is the preferred option also for major pipelines. Some of the largest cross-border gas pipelines built in or near Europe over the past few years used project finance: the South Caucasus Pipeline from Azerbaijan to Turkey, the Medgaz pipeline from Algeria to Spain, the offshore Nord Stream pipeline from Russia to Germany under the Baltic Sea, and the Blue Stream pipeline from Russia to Turkey under the Black Sea.

Since project finance is so prevalent in natural gas projects, it is important to understand its main parameters and the implications of using project finance for project development.

Figure 1: Global Project Finance for Oil and Gas Projects



Source: Project Finance International

Figure 2: LNG Projects by Financing Scheme and Year Approved

Source: Project Finance International, industry press, company announcements

Corporate Finance versus Project Finance

In typical corporate financing, the shareholders provide funds according to their respective shares (for example, $2 billion for a 20 percent stake in a $10 billion project) and they draw such funds from their own cash flows and/or from debt issued against the company's broader assets. As long as the parent guarantees the debt, it is the parent's balance sheet that defines bankability, not the specific characteristics of the project.

In project finance, lenders lend to a dedicated project company created by the sponsors, usually a special purpose vehicle (SPV). These SPVs normally offer no or limited recourse to the assets of the parent companies once construction has been completed and the project has started operations. The amount that lenders are willing to provide depends on various parameters, but many large-scale LNG and cross-border pipeline projects are leveraged from 50 to 70 percent. This structure allows companies to provide considerably less cash up front and to borrow without burdening their own balance sheets with extra debt (unless they own over 50 percent and/or control the borrower, in which case they have to include project finance debt on their balance sheets). In return, lenders get preferential access to cash generated by the project.

In such structures, it is the strength of the project that matters more than the financial strength of the project sponsors. However, the lenders need to be convinced that the sponsors have the technical capacity to build and operate the project over its lifetime. This is particularly helpful for sovereigns or their agents that participate in large projects but lack resources or credit ratings to provide cash or to borrow money upfront for the construction phase. Indeed, stronger project sponsors are sometimes willing to assume the additional costs associated with project finance structures (i.e. the long due-diligence process, repayment terms, etc.) in order to ensure the inclusion of weaker partners, usually local and/or state-owned companies from the host country that may have a weaker credit profile.

3 Reducing Risks in the Eastern Mediterranean

Securing project finance depends on assuring the lenders that they can be repaid in full by project revenues without need for recourse to a sponsor's assets. Better quality projects and structuring can normally secure higher gearing and better terms. For major projects like cross-border pipelines or LNG, lenders will consider whether:

- There is sufficient gas to allow for high utilization during the project's lifetime;
- The gas can be produced economically and reliably;
- All the project's components are technically feasible;
- The sponsors can manage any risks during construction;
- Counter-party risk is limited and the buyers of the gas and/or of capacity rights are credit-worthy;
- The gas can be sold (or capacity in a pipeline or LNG plant can be leased) at attractive prices/tariffs over a long period that exceeds loan duration (15-20 years);
- There is host government and community support for the project;
- All permits needed for the project are in place;
- The project has an impact on the environment;
- The political and regulatory setting is sufficiently stable and predictable;
- The sponsors have put forward compelling risk mitigation strategies; and
- The sponsors' claims are supported by third-party due diligence.

Projects require extensive studies and consultations as well as contracts to reassure lenders that they are bankable. In this framework, project sponsors:

- Confirm with reasonable certainty that the gas reserves exist;
- Conduct technical feasibility studies to support a development plan;
- Develop a cost estimate for the project's components;
- Build an organization with technical competence to manage execution;
- Employ established technologies and/or contractors with strong track-records;
- Adjust ownership shares or bring in partners to boost alignment;
- Secure buyers with investment-grade credit ratings (and reliable onward customer bases);
- Sign legally binding long-term gas sales contracts (or capacity rights under firm ship-or-pay terms in a pipeline or tolling LNG) to reduce volume and potential price risk;
- Ensure government support, and may bring in governments as partners;
- Conduct stakeholder consultations with local communities and organizations;
- Undertake detailed environmental impact studies and propose risk mitigation;
- Secure government reassurances about stability of terms (e.g. taxes); and
- Hire third parties to verify the sponsors' claims independently.

Securing project finance depends on assuring the lenders that they can be repaid in full by project revenues.

The Tamar field has operated reliably since it came onstream in March 2013, just four years after discovery, a relatively short time frame for such a big project.

With this framework in mind, how do prospective projects in the Eastern Mediterranean look to financiers? Projects in Israel and Cyprus have different strengths and weaknesses, which, in part, depend on the broader economic and political context and, in part, on the specific development option. Broadly speaking, gas in the Eastern Mediterranean will be monetized through a combination of options. Each carries certain advantages and also constraints.

- Deliveries by pipeline to domestic markets (no cross-border transactions). This is how Tamar has been developed so far (with possible expansions in the future to cover exports). In Cyprus, the local energy market is too small to justify development of Aphrodite without exports.
- Deliveries by pipeline to neighboring countries for local use and/or for re-export to third countries. This option includes pipeline sales to Egypt, Jordan, and the West Bank, as well as utilization of Egypt's now idle liquefaction facilities to export gas to international markets as LNG. There are also secondary plans, which remain hypothetical on the basis of existing discoveries and market conditions, to send gas further afield to Greece and Southeast Europe via pipeline.
- Deliveries by LNG. This could take different forms. The facilities could be located onshore or offshore, and they could be joint or individual.

Regardless of which option is pursued, certain realities and risks remain. In Israel, the resource base is reasonably well understood. The Tamar field has operated reliably since it came onstream in March 2013, just four years after discovery, a relatively short time frame for such a big project.

The political and regulatory environmental in Israel, however, has been unpredictable. Since 2011, Israel has changed the tax system for the petroleum sector,[5] imposed limits on the amount of gas that could be exported,[6] and even sought to oblige the largest owners in the Tamar and Leviathan fields to divest part of their positions in the country to ensure competition in the natural gas sector.[7] These changes, while not unprecedented for a country that has recently discovered hydrocarbons, have compounded uncertainty and impeded the development of Israeli gas. They also underscore the fear that the rules of the game might change further, after companies have committed large amounts of capital.

Despite these changes, the Tamar and Leviathan partners are pursuing various options, although all face hurdles. For example, floating LNG is an early-stage technology that might involve too much technical risk for many lenders to accept for now, while any large-scale onshore facility would have to address the environmental concerns of local communities. Israel has examined a number of options that either fell through or have yet to materialize, including negotiations to sell LNG to Gazprom,[8] bringing in a partner (Woodside, which ultimately withdrew) to facilitate LNG development

[5] Noble Energy, *10-K annual report for the period ending December 31, 2012*, p. 29, www.nobleenergyinc.com.

[6] Ministry of National Infrastructures, Energy and Water Resources, *The Inter-ministerial Committee to Examine the Government's Policy Regarding Natural Gas in Israel*, September 3, 2012, www.energy.gov.il. Karen Ayat, "Israeli High Court of Justice Rejects a Petition Against Gas Exports," in *Natural Gas Europe*, October 23, 2013, www.naturalgaseurope.com.

[7] Noble Energy, *10-K Annual Report for the Period Ending December 31, 2014*, p. 29, www.nobleenergyinc.com; *Jerusalem Post*, "Regulator may Declare Noble, Delek a Cartel after Backtracking on Gas Deal," December 24, 2014, www.jpost.com; see also Nikos Tsafos, "A Simpler Way to Market Competition," *Jerusalem Post*, January 19, 2015, www.jpost.com.

[8] Delek Group, *March 21st, 2012- Letter of Intent for the Exportation of LNG (Liquefied Natural Gas)*, March 21, 2012, www.delekenergy.co.il.

and sales,[9] and a proposal to supply piped gas to Cyprus.[10]

Cross-border sales to Israel's neighbors will have to overcome numerous concerns, including political risks (cancelation of contracts), or risks of non-payment.[11] On balance, this appears to be the option that the companies concerned currently find the most promising.

Cyprus is at an earlier stage than Israel. In June 2015, Block 12 partners made a "Declaration of Commerciality" for Aphrodite and submitted their development plan to the government that, reportedly, proposes to send gas from the field to domestic and regional markets (by pipeline to Egypt).[12] For Cyprus, an important question will be which partners are involved in project development, in Aphrodite and, possibly, other fields. Large companies such as ENI and TOTAL have undertaken initial exploration and their participation could provide financial depth as well as enhanced access to export markets for any larger-scale projects. Nevertheless, initial results from their exploration in offshore Blocks 9, 10, and 11 have been disappointing.[13]

These types of risks are not uncommon for major gas projects and can be managed. The industry has developed an intricate web of financing structures, which combine public and private sources, to manage risks. Securing project finance will require engagement with a broad set of actors with distinct mandates, strategies, and responsibilities. This engagement will be crucial if the Eastern Mediterranean is to realize its full potential.

The industry has developed an intricate web of financing structures, which combine public and private sources, to manage risks.

[9] Noble Energy, *Noble Energy Announced Termination of Leviathan MOU with Woodside*, May 20, 2014, www.nobleenergyinc.com.

[10] Delek Group, *Submission of Offer to the Public Tender for the Supply of Natural Gas to Cyprus*, April 16, 2014, www.delekenergy.co.il. Delek Group, *Update with Regards to the Extension of the Public Tender for the Supply of Natural Gas to Cyprus*, February 1, 2015, www.delekenergy.co.il and Delek Group, *Update with Regards to the Extension of the Public Tender for the Supply of Natural Gas to Cyprus*, February 3, 2015, http://ir.delek-group.com/phoenix.zhtml?c=160695&p=irol-newsArticle2&ID=2013079.

[11] Starting in the 2011/12 fiscal year, Egypt accumulated around $6 billion in arrears toward oil and gas companies, although this has fallen recently. IMF, *Arab Republic of Egypt*, 2014 Article IV Consultation, February 2015, p. 27, https://www.imf.org/external/pubs/ft/scr/2015/cr1533.pdf.

[12] *Cyprus Mail*, "Development and production plan for Aphrodite submitted," June 10, 2015, www.cyprus-mail.com; Reuters, "Cyprus Gas Field to Produce 8 bcm a year with Pipeline to Egypt," June 7, 2015, www.reuters.com.

[13] *Sigma Live*, "Γεώτρηση ENI/KOGAS, Κανένα αποτέλεσμα στην Αμαθούσα," March 26, 2015, www.sigmalive.com; Upstream Online, "Total 'finds no targets off Cyprus'," January 21, 2015, www.upstreamonline.com; and also Natural Gas Europe, "Disappointment at 'Onasagoras' Cyprus Block 9," December 22, 2014, www.naturalgaseurope.com.

4 Sources of Project Finance and the Role of the Public Sector

Companies active in the Eastern Mediterranean are likely to draw on various private and public sector sources of finance, as is typical for major energy projects around the world.

Between 2008 and 2014, ECAs provided almost $34 billion in direct loans (excluding loan guarantees) for integrated upstream and LNG projects.

Between 2008 and 2014, commercial banks extended loans of over $45 billion to integrated upstream gas production and LNG supply projects in the Americas, Russia, and the Asia-Pacific region. The total is higher if overall financing of oil and gas projects, pipelines, and LNG projects is included (see above for cumulative figures). These funds were provided by a diverse group of international and regional banks and financial institutions, with Japanese and French banks in the lead (Table 2, Appendix).

Governments also use export credit agencies (ECAs) or multilateral institutions to support projects and promote energy security, economic development, exports of goods and services, as well as environmental and social objectives. Public sector financing is important in large-scale energy projects and it could prove useful in the Eastern Mediterranean. Its importance grew in the critical liquidity situation that followed the global financial crisis.[14] Between 2008 and 2014, ECAs provided almost $34 billion in direct loans (excluding loan guarantees) for integrated upstream and LNG projects (and an even greater amount toward the sector as whole). Public sector financing for liquefaction projects comes mainly from the Asia-Pacific region (from Japan's JBIC, China's CEXIM, and Korea's Kexim) and the United States, and to a lesser degree from Italy's SACE (Table 2).

The region's governments could also turn to other governments to secure funds for project development. In recent years, for example, Egypt has received over $30 billion in aid from Arab and other governments, including fuel shipments and financing, for infrastructure projects (power plants).[15] In the past, the Chinese government has provided funds to support oil and gas developments, including pre-paying for oil to be delivered later. Funds come from various institutions, but chiefly from CEXIM and the China Development Bank.[16]

The European Union (EU) is a more likely source of funds for energy infrastructure in the Eastern Mediterranean, especially for Cyprus, which is a member state. The European Investment Bank (EIB) is the most important source of financing in the EU and the largest multilateral lender and borrower in the world. Its aim is to support EU policy objectives, including the promotion of strategic infrastructure, climate action, improved access to finance for smaller businesses, and innovation and skills. In 2014 alone (signature date), the EIB disbursed almost €77 billion, of which €12.8 billion went toward energy projects (Figure 3). The largest ever single loan by the EIB was €1.9 billion in 2014 to the U.K.'s National Grid for planned investments across its electricity transmission network.[17] However, typical EIB loans are smaller (average loan: €135 million) and the bank has a relatively limited risk appetite.

The Facility for Euro-Mediterranean Investment and Partnership (FEMIP) is the main EU financial instrument for projects involving associated countries south and east of the Mediterranean Sea. FEMIP is aligned with the European Neighbourhood Policy (ENP) and the Union for

[14] D. Ledesma (2012), *Project financing LNG projects*, Chapter 16 in the "Principles of Project Financing," Gower Publishing.

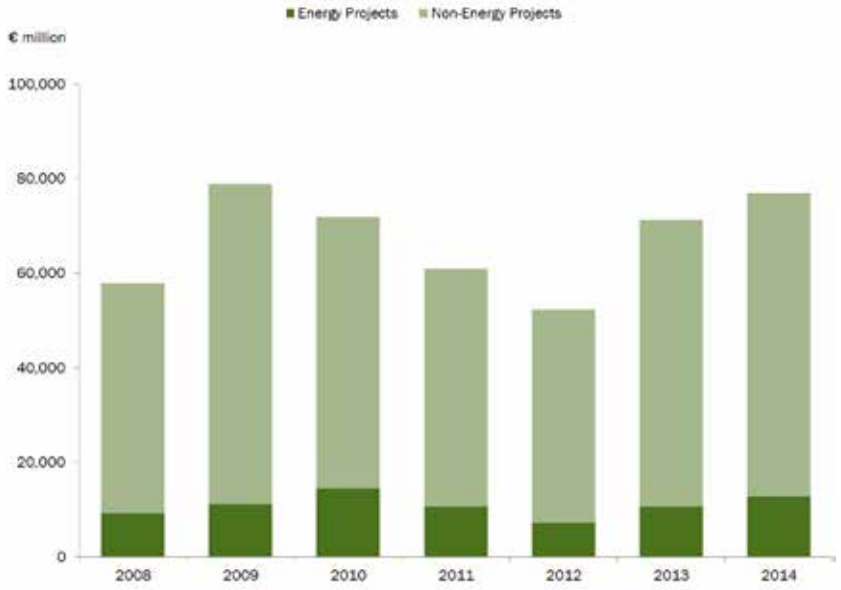
[15] David Kirkpatrick, "3 Persian Gulf Nations Pledge $12 Billion in Aid for Egypt," *The New York Times*, March 13, 2015; and Sara Aggour, "Overview of Financial Aid Packages to Egypt," *Daily Egypt News*, April 7, 2014.

[16] Gallagher, Kevin P., and Margaret Myers (2014), *China-Latin America Finance Database*, Washington: Inter-American Dialogue.

[17] European Investment Bank, *EIB at a glance // Projects financed*, accessed March 28, 2015, www.eib.org.

the Mediterranean. Energy is a focus area for EIB-FEMIP, which provided some €730 million in loans for development of Egypt's LNG facilities at Idku and Damietta between 2003 and 2005. The scheme includes a financial envelope of €9.6 billion for the period 2014-20.[18]

Figure 3: Project Finance by the European Investment Bank (EIB)



Source: European Investment Bank

A new European Fund for Strategic Investments (EFSI) is expected to become operational within the EIB for the period 2015-17 for major projects in the member states. The fund is to include a €16 billion guarantee from the EU budget and €5 billion in committed funds from EIB, designed with a higher risk tolerance than the projects currently financed by the EIB or EU programs. The aim is to help reduce project risk and thus facilitate private investment with higher gearing.[19]

EU support in the form of EIB, FEMIP, or EFSI loans could be complemented by finance from the EU's €5.85 billion Connecting Europe Facility (CEF). This is available in the form of grants for the period 2014-20 toward development of trans-European energy infrastructure such as pipelines, storage, LNG terminals, transmission, and smart grids. Under the facility, the Commission has drawn up a list of 248 EU Projects of Common Interest (PCIs) that may apply for CEF funding. The current PCI list, which is revised every two years, includes a proposed pipeline from offshore Cyprus to Greece and an LNG storage facility in Cyprus in support of possible future LNG exports.[20] However, PCI status does not render CEF funding either automatic or guaranteed and competition

[18] FEMIP forms a part of the European Neighbourhood Instrument (ENI) of the ENP that covers countries in the Mediterranean as well as "Eastern" neighbors of the EU — i.e. countries in the Southern Caucasus and Eastern Europe. It has a combined financial envelope of €15.4 billion for the 2014-20 period. For more information, see European Investment Bank, *FEMIP for the Mediterranean*, May 23, 2014, www.eib.org; and also Regulation (EU) No 232/2014 of the European Parliament and of the Council of March 11, 2014 establishing a European Neighbourhood Instrument, in Official Journal of the European Union, March 15, 2014.

[19] European Investment Bank, *Investment plan for Europe // EC-EIB factsheets*, accessed March 28, 2015, www.eib.org.

[20] Ibid.

These instruments may be especially suitable for developing the domestic use of natural gas in Cyprus and possible future pipeline exports to EU countries and/or regional markets.

between PCI projects is a normal part of the process for securing CEF money.[21]

The European Bank for Reconstruction and Development (EBRD) is another potential source of funds for the Eastern Mediterranean. The EBRD has a mandate to operate in the energy sector, with an emphasis on supporting energy efficiency and transition to a low-carbon economy, general economic benefits, energy security, and market liquidity. The EBRD is not an EU institution as such. The bank is owned by 64 countries, plus the EU and the EIB, and its mandate goes beyond Europe to include the Caspian and North Africa regions.

In recent years, the EBRD's energy work in Europe has included cofinancing the Świnoujście LNG import terminal in Poland, and contributing approximately €600 million for gas storage facilities for the Southern Corridor, in Serbia, Hungary, and Croatia. In 2014, the EBRD financed 14 natural resources projects across its coverage area with a total of €634 million. A further €1.056 million went toward 24 power and energy projects (average loan size approximately €45 million). The EBRD's mandate includes Cyprus (until 2020), Egypt, and Jordan — but not Israel.[22]

Financial instruments managed by the EIB (including FEMIP and EFSI) and the CEF, as well as the EBRD could be applicable in the Eastern Mediterranean, with their principal contribution being to act as "catalysts" for the entry of other, larger lenders (commercial banks and ECAs). These instruments may be especially suitable for developing the domestic use of natural gas in Cyprus and possible future pipeline exports to EU countries and/or regional markets. However, they could also contribute to liquefaction options aimed at international markets, especially if these also provide for deliveries of LNG to EU markets, a priority of the EU's new Energy Union Package.[23] Such EU-specific goals are unlikely to be a condition for EBRD funding.

[21] Other European sources of grants could include the Neighbourhood Investment Facility (NIF), which is a part of the EU's ENI. The facility is designed as a "blending" instrument to facilitate leveraging loans from European financial institutions and risk capital from the private sector, by means of giving EU subsidies (grants) to large investment projects. It has earmarked funds of €595 million available for the period 2014-17 (European External Action Service and European Commission, *Programming of the European Neighbourhood Instrument (ENI) - 2014-2020*, http://eeas.europa.eu).

[22] European Bank for Reconstruction and Development, *What we do: sectors and topics*, accessed March 28, 2015, www.ebrd.com.

[23] European Commission, Energy Union Package, Brussels, February 25, 2015, COM(2015) 80, http://ec.europa.eu/priorities/energy-union/docs/energyunion_en.pdf.

5 Conclusion

Securing funds for gas projects will be critical in developing the discoveries in the Eastern Mediterranean. Financing can be limited to the project itself (project finance) or can involve recourse to the project sponsors (corporate financing). Project finance has been gaining in popularity in recent years: almost 60 percent of the liquefaction capacity approved between 2009 and 2014 used some form of project finance, and several major gas pipelines completed recently to bring gas to Europe similarly involved project finance. Project finance is likely to be part of the financial toolkit in the region; Delek Group has already used it to finance its share of the Tamar project and Noble Energy is considering it for Leviathan.

To secure project finance, the sponsors need to minimize risk to the extent possible and reassure lenders that the debts can be repaid by the project itself. In Israel, gas projects have several advantages: a strong resource base, competent sponsors, and a series of preliminary agreements to market the gas. Even so, recent history highlights several risks, especially repeated changes to the regulatory environment (tax, export, and competition policies). Lenders will need to be convinced that the environment for gas development will not change while loans are outstanding.

Cyprus is earlier in the development cycle and its most immediate priorities will be to develop the Aphrodite field and to continue exploration, in light of some initially disappointing results and lower oil prices. Given the country's financial position, project finance might make sense as it allows the state to participate. But the main uncertainties in Cyprus center on the ultimate size of the resource. The preferred solution at the moment seems to be an export pipeline to Egypt, if this proves commercially feasible. However, alternative gas monetization options, such as LNG, could again be considered if additional gas quantities are discovered.

Project finance typically relies on a mix of private and public sector funds. Investors need to develop a strategy for securing funds from public institutions. Such a strategy for Cyprus and Israel could include:

- selling their gas to companies from countries that can provide such financing, for example importers from Japan or other nations in Asia (if part of Eastern Mediterranean gas resources is monetized as LNG);
- bringing in as project co-owners companies from countries that can mobilize public sector finance, for example large state-owned companies from Japan, Korea, or China;
- purchasing goods and services from countries that provide finance to exporters, for example hiring EPC contractors and/or procuring manufactured goods from companies based in the United States, Italy, and/or other countries with similar export strategies; and
- aligning project development and export strategies with European policy objectives to qualify for various sources of EU finance.

Governments and project sponsors need to make bankability, or the ability to secure finance, the top priority in their development efforts. The more they can make projects bankable, the greater the likelihood that this gas will be developed and the benefits will flow to the people of the region and beyond. The following recommendations addressed to the principal actors involved are intended to improve the prospects for securing the necessary finance to enable the region's resources to be developed for the benefit of all involved.

- The companies involved in hydrocarbons exploration and development in the Eastern Mediterranean, with the support of their host governments where appropriate, should continue with their exploration activities,

The formulation, adoption, and implementation of the necessary laws, the establishment of effective institutional and regulatory structures, and the efficient and transparent management of gas revenues are major challenges.

technical and market studies, monetization/development planning, and exploratory discussions with potential buyers to reduce uncertainty in project development.

- Host governments, including regulators and other appropriate/relevant state bodies, should ensure regulatory certainty, including the tax, export, and competition regimes, and contract sanctity, particularly in Israel. Existing and potential new investors need to feel secure about the rules of the game over a long-term period — normally the project lifetime.
- Host governments and companies should work together to identify major financiers from the international financial community, and engage with them early in the development of a project. This will allow the governments in the region to understand — and possibly alleviate — problems that could impede development of the region's resources.
- Host governments and companies should also engage with public financial entities, a major source of energy finance in recent years. Discussions with them should cover issues such as conditionality and how this might affect partner selection for the projects in question, and should include major global ECAs as well as European financial institutions and EU funding instruments.
- EU instruments should serve mainly as a "catalyst" facilitating the entry of other lenders.
- All stakeholders, both internal and external, should put project bankability in the Eastern Mediterranean at the heart of the policy discussion. Indeed, beyond technical issues, project development will predominantly be shaped by the ability of each proposed option to attract external funds.

Appendix

Table 1: Financial Metrics for Main Licensees in the Eastern Mediterranean and Select Comparisons (in *italics*)

	2008	2009	2010	2011	2012	2013	2014
Cash from Operating Activities ($ million)							
TOTAL	27,458	17,240	24,516	27,193	28,858	28,513	25,608
ENI	32,067	15,526	19,506	20,025	15,907	14,567	20,058
Noble Energy	2,285	1,508	1,946	2,170	2,933	2,937	3,506
KOGAS	523	658	1,462	181	1,057	1,930	2,582
Delek Group	469	835	279	587	1,016	652	494
ExxonMobil	*59,725*	*28,438*	*48,413*	*55,345*	*56,170*	*44,914*	*45,116*
BG Group	*8,283*	*5,532*	*6,386*	*6,982*	*7,995*	*7,817*	*7,399*
Capital Expenditures ($mm)							
TOTAL	17,445	16,527	18,310	24,986	25,574	29,478	26,320
ENI	19,026	17,032	16,527	16,582	16,408	16,932	16,249
Noble Energy	2,263	1,317	2,143	3,024	3,626	4,311	4,883
KOGAS	719	1,107	1,457	1,887	2,890	3,434	3,049
Delek Group	1,731	1,833	2,001	2,687	2,384	1,389	726
ExxonMobil	*26,143*	*27,092*	*32,226*	*36,766*	*39,799*	*42,489*	*38,537*
BG Group	*5,707*	*7,599*	*8,671*	*10,217*	*11,291*	*11,634*	*8,877*
Debt to Equity or Capital							
TOTAL	23.0%	27.0%	22.0%	23.0%	22.0%	23.0%	31.0%
ENI	38.0%	46.0%	47.0%	46.0%	24.0%	25.0%	22.0%
Noble Energy	26.0%	25.0%	25.0%	38.0%	33.0%	35.0%	38.0%
KOGAS	78.9%	73.0%	73.6%	77.2%	76.1%	76.4%	75.8%
Delek Group	90.6%	92.3%	90.3%	87.1%	86.7%	86.9%	89.4%
ExxonMobil	*7.4%*	*7.7%*	*9.0%*	*9.6%*	*6.3%*	*11.2%*	*13.9%*
BG Group	*7.1%*	*17.0%*	*20.2%*	*27.2%*	*24.3%*	*24.8%*	*29.2%*
Moody's Credit Rating							
TOTAL	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1	Aa1
ENI	Aa2	Aa2	Aa3	A1	A2 / A3	A3	A3
Noble Energy	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2	Baa2
KOGAS	A2	A2	A1	A1	A1	A1	A1 / Aa3
Delek Group	unrated	unrated	unrated	unrated	unrated	unrated	unrated
ExxonMobil	*Aaa*	*Aaa*	*Aaa*	*Aaa*	*Aaa*	*Aaa*	*Aaa*
BG Group	*A2*	*A2*	*A2*	*A2*	*A2*	*A2*	*A2*

Source: Company financial reports and Moody's Investor Service. The financial numbers are not strictly comparable due to differences in reporting and accounting standards.

Table 2. Major Players in LNG Project Finance, 2008-2014

Mandated Lead Arrangers	$ million	Public Sector Entities	$ million
Sumitomo Mitsui	5,357	JBIC	16,840
Mitsubishi UFJ	4,317	US EXIM	6,570
Mizuho	3,521	China EXIM	4,787
Societe Generale	2,326	Kexim	2,087
BNP Paribas	1,808	SACE	1,750
Other	27,829	Other	1,617
Total	45,158	Total	33,651

Source: Project Finance International. The totals for Mandated Lead Arrangers refer to consortia amounts initiated by that institutions, and hence do not all originate with that institution.

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